

PIC/D-34-58  
14 November 1958

MEMORANDUM FOR: Special Assistant to the DCI for Planning  
and Development

ATTENTION:

25X1

THROUGH: Director, Photographic Intelligence Center

SUBJECT: Trip Report [redacted]  
to Discuss Gold Leaf Film Titler

25X1

1. A visit was made to [redacted] on 13 November with Mr. E. D. Greinke, BuAer; LCDR K. M. Matthes, BuAer; and [redacted] PIC, to view the finished prototype of the Navy's gold leaf film titler. [redacted] met us at the plant and answered all questions about the titler.

25X1

25X1

25X1

25X1

2. Basically, the gold leaf film titler is a flexowriter with a film transport mechanism and an automatic frame counter attached. A gold leaf ribbon is used instead of a normal ribbon which produces a gold title on roll film sizes 70 mm to 9½ inch. The operator can type a title directly to the leader and at the same time the read-out mechanism cuts a paper type similar to a teletypewriter tape. A continuous loop can be made from the paper type fed through a reader and the roll of film can be titled and advanced automatically. In normal operation it is best to have the titler stop at the new frame so the operator may monitor the location of the title on the new frame.

3. The following details were noted:

a. Cabinet: The cabinet is of sturdy air-tight construction using the base of the titler as the bottom of the cabinet. It has sufficient carrying handles to make the machine portable.

b. Measurements: The titler is approximately 36" x 36" x 24" high.

c. Weight: The weight with case is approximately 100 lbs.

d. Film Advance: Time required to advance 9½ inch aerial film one frame automatically is approximately 5 seconds.

SECRET

e. Printing Speed: 100 characters and spaces are printed in 10 seconds.

f. Frame Numbers: The frame numbers advance automatically and a visible counter is provided to advise the operator of the number of frames titled.

g. Gold Leaf Ribbon: The titling capacity of one roll of gold leaf ribbon is 1000 frames and the cost of the ribbon is \$2.50.

h. Paper Tape: The punch coded type is standard paper tape and costs approximately \$2.50 per roll.

i. Permanency of the Title: The gold leaf titles are hard to rub off. Krylon spray can be used to protect the titles.

k. Power Source: The titler operates on 110 volts, 60 cycles, single phase current.

l. Titler Spacing: The titler affords 16 titles per inch.

m. Line Spacing: The line spacing is .075 inches.

n. Cost: The Navy is having 3 more titlers built at a cost of \$9700 each. They will be delivered in December. If desired two additional titlers could be purchased at a cost of \$9700 each and delivered 1 February.

4. Several changes were proposed to the prototype and the next titlers will be so built, i.e., (a) The carriage travel will be extended to eight inches allowing 128 characters or spaces per line, (b) A 1 inch camels hair brush will be provided to clean the film of any excess flakes of gold leaf before they become adhered to the film, and (c) A lock will be provided for the case since the flexowriter could be used to type on paper in gold.

5. The titler appears to be a rapid, foolproof, operator proof method of titling aerial film. A roll of 9½ inch, 250 exposure film can be titled in approximately one hour.

6. Edge-titling of film was discussed to be used to title sonne or side scanner film. A new machine would have to be developed with a movable type basket vice a movable carriage. The film spools would be mounted vertically and the film transported to where a title is desired and the basket of type would move on a carriage typing a

SECRET

single line similar to a teletypewriter. The cost of such a device would be \$10,000 each plus \$10,000 to \$15,000 engineering costs. Thus four machines would cost \$13,750 each.

7. [ ] had modified a 70 mm film magazine to place either binary code or alpha numeric code on each frame of film. The area occupied by 96 digits would be 1.75 cm x .65 cm. A 1 inch cathode ray tube is read through optics through the base of the film. The equipment necessary in the aircraft to read the instruments and convert the readings to binary or alpha-numeric would occupy  $1\frac{1}{2}$  cubic feet and would weigh about 80 lbs. This equipment would place heading, ground speed, altitude, tip, tilt, crab, drift, position and any other information desired, directly on the film. This would eliminate the titling time lag if alpha numeric was used. If binary code was used an automatic titler could read the code and automatically title it.

25X1

8. Examples of the gold leaf titling are enclosed as Enclosures 1, 2, and 3.

[ ] LCDR-USN  
Special Assistant to Dir/PIC

25X1

Enclosures:

1. 70 mm film titled with Gold Leaf
2. 4X Enlargement of Enclosure (1)
3.  $9\frac{1}{2}$  x  $9\frac{1}{2}$  Aerial Film Titled with Gold Leaf